

Name of Inventors: Venkatesh et al.
Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake – (419) 255-5900

Serial No. 09/692,725

Sheet No. 1 of 16

Docket No 1-82161

1/16

FIG. 1

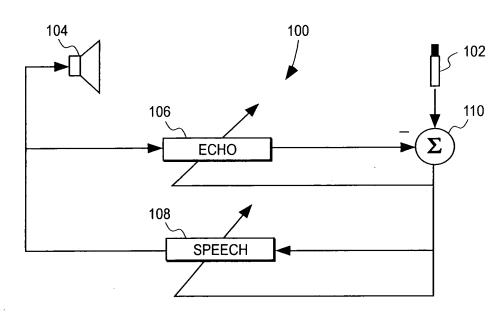
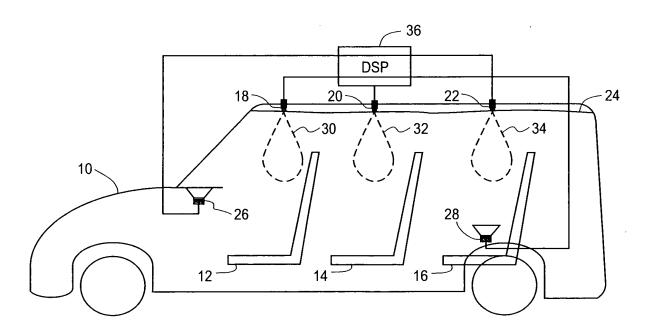


FIG. 2



CORRECTED DRAWINGS

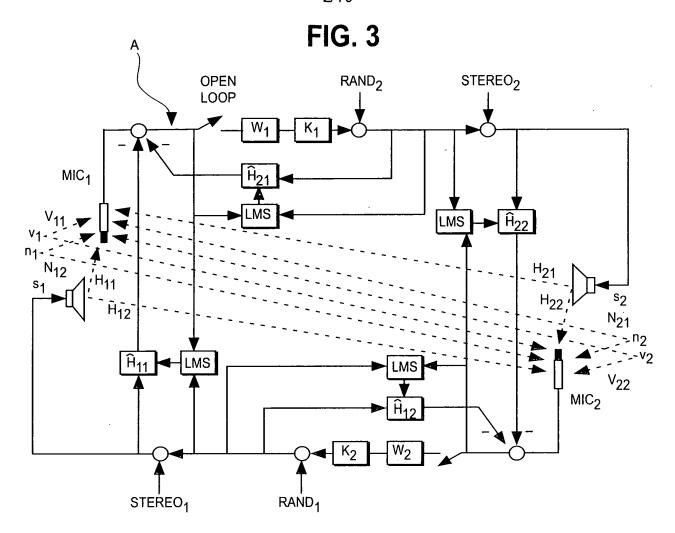
ADAPTIVE FILTER FOR SPEECH ENHANCEMENT IN NOISY ENVIRONMENT

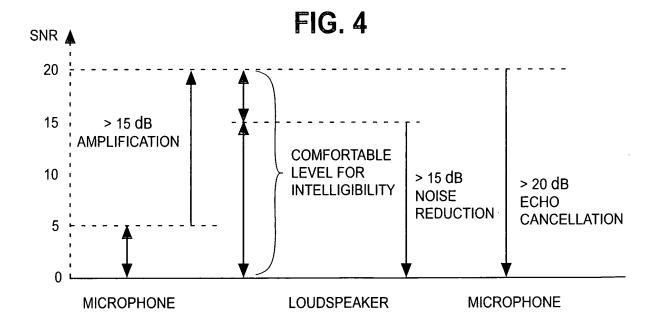
Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary: Scott A. Blake – (419) 255-5900

Serial No. Docket No: 09/692,725 Sheet No. 2 of 16 1-82161

2/16





CORRECTED DRAWINGS
ADAPTIVE FILTER FOR SPEECH ENHANCEMENT IN
NOISY ENVIRONMENT Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:

Scott A. Blake – (419) 255-5900 Docket No: 1-82161 Serial No. 09/692,725 Sheet No. 3 of 16 3/16 ANALOG → FC=2.5 KH₂ LPF 4 POLE 48 INTERPOLATE Fs=20 KHz-312 F₀ Wiener Filter 300 308 DIGITAL 310 BPF 4TH ORDER (350.2000) FIG. 5 CANSAL FILTER 306 304 OPTIM. TOOL 44 Ľ. FS=5 KH_Z SAMPLE MEL 302 > 42 -FIG. 6 FC=1.7 KH₂ LPF 4 POLE ANALOG 6 HPF 2 POLE FC=50 H_Z 8

CORRECTED DRAWINGS
ADAPTIVE FILTER FOR SPEECH ENHANCEMENT IN NOISY ENVIRONMENT

Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake – (419) 255-5900

Serial No.

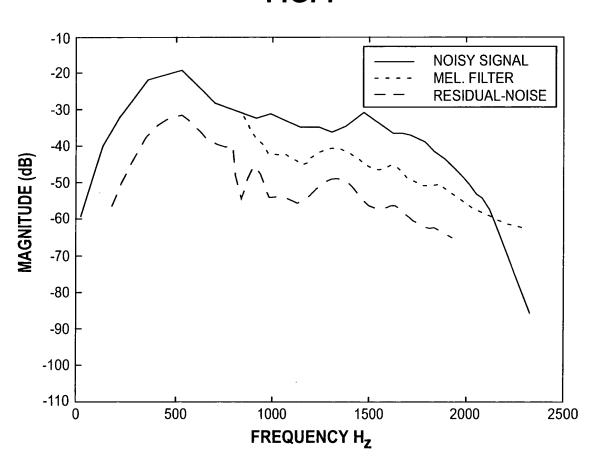
09/692,725

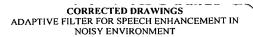
Sheet No. 4 of 16

1-82161

4/16

FIG. 7





Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:

Scott A. Blake – (419) 255-5900

Serial No. 09/692,725

Sheet No. 5 of 16 5/16

FIG. 8

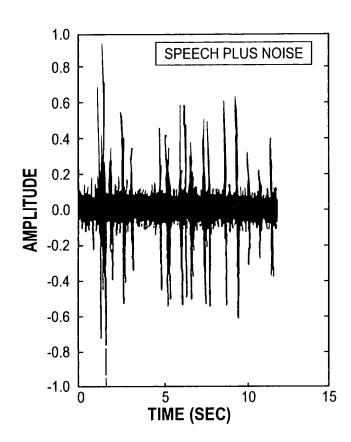
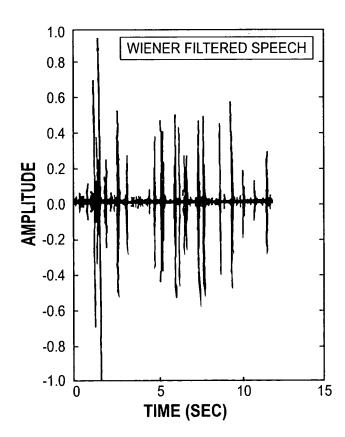


FIG. 9



Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:

Scott A. Blake – (419) 255-5900

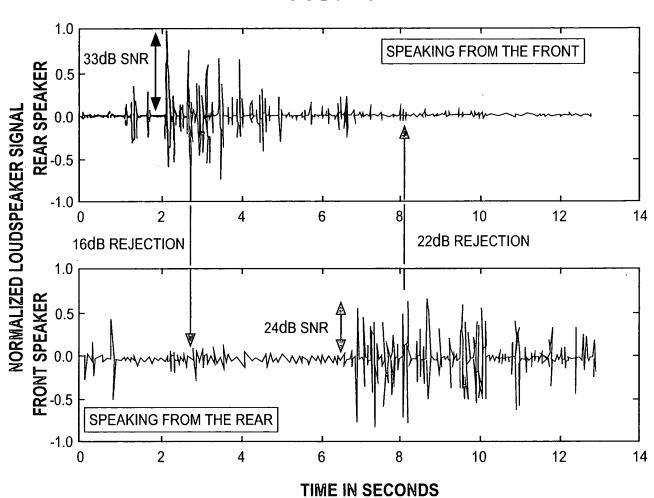
Serial No. 09/692,725

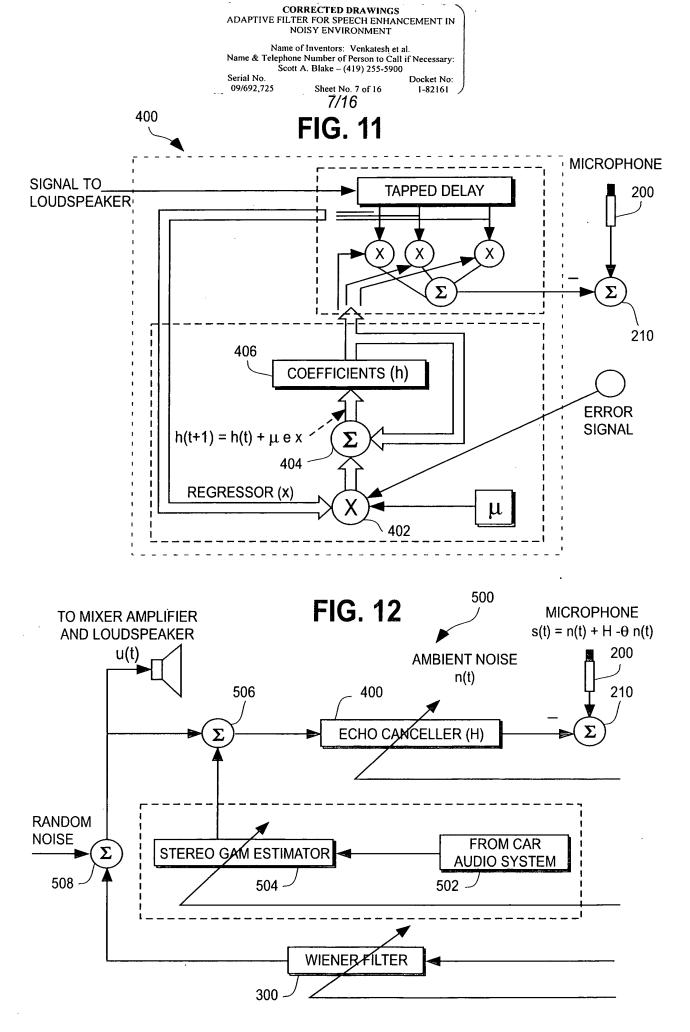
Sheet No. 6 of 16

Docket No: 1-82161

6/16

FIG. 10





ADAPTIVE FILTER FOR SPEECH ENHANCEMENT IN NOISY ENVIRONMENT

Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake – (419) 255-5900

Serial No.
09/692,725 Sheet No. 8 of 16 1-82161

FIG. 13

```
m=20;delays=30;sig=.00;n=170;
y=filter(h,1,r)+sig*n;
htp1=ht(1:delays+m);
pn=eye(m);
L=length(ht);
ind=delays+m:m:n;
lind=length(ind);
kg=zeros(m,(lind-1) *m+1);
for j=1:lind
ind0(1:m,j)=[(j-1) *m+1:j *m] +delays;
end
htemp=ht(ind0);
for k-200:10000
ind1=k-ind0;
[htemp(:,1)k0,pn,an]=rls1(pn,y(k-1),r(ind1(:,1)),htemp(:,1),1);
for I=(ind-1) *m:-1:1
kg(:,l+1)=kg(:,l):
end
kg(:,1)=k0;
for j=2:lind
htemp(:,j)=htemp(:,j)+kg(:,(j-1)*m+1)*(an-htemp(:,j)!*r(ind1(:,j)));
end
```

Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:

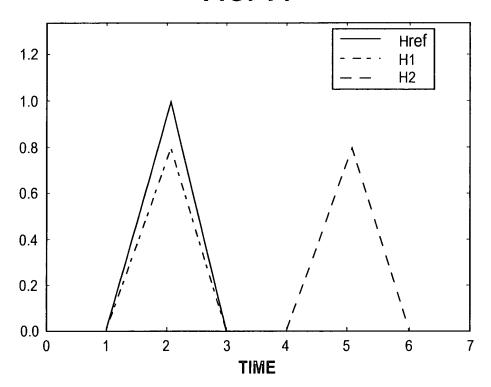
Scott A. Blake – (419) 255-5900

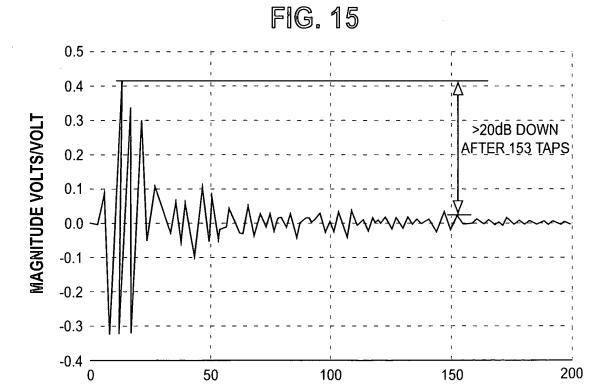
Serial No. 09/692,725

Sheet No. 9 of 16 9/16

Docket No: 1-82161

FIG. 14





TAPS AT 5 KHZ

Name of Inventors: Venkatesh et al.
Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake – (419) 255-5900

Serial No. 09/692,725

Sheet No. 10 of 16 10/16



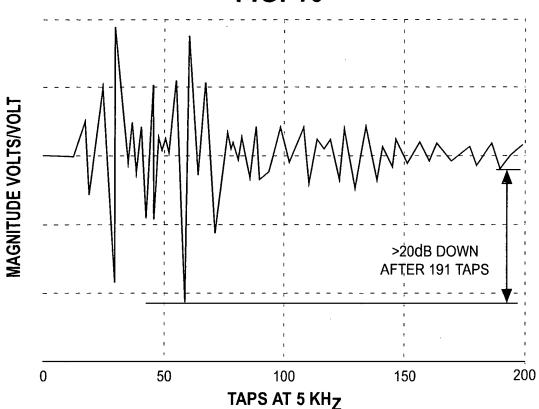


FIG. 17

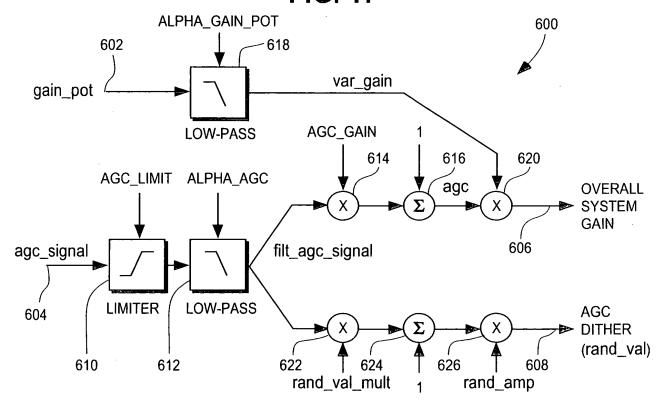




FIG. 18

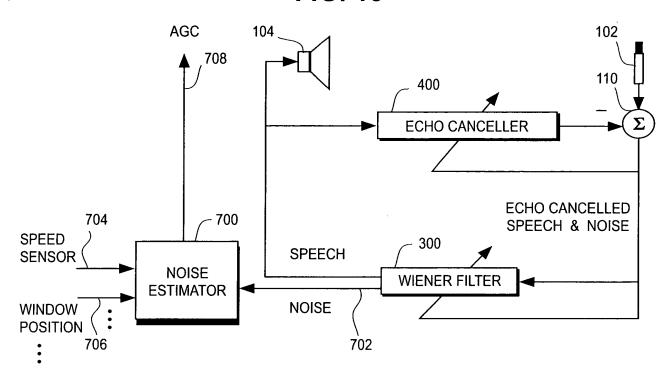
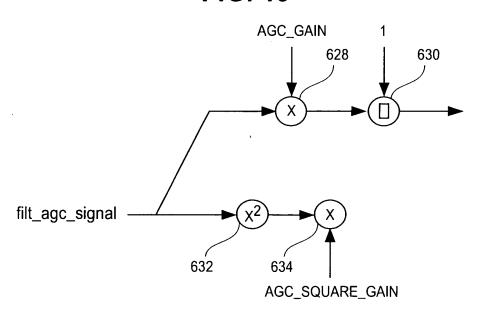


FIG. 19



Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake – (419) 255-5900

Serial No. 09/692,725

Sheet No. 12 of 16 12/16

FIG. 20

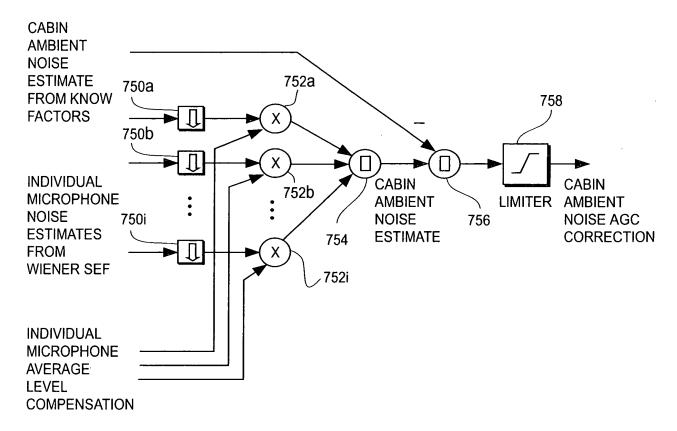
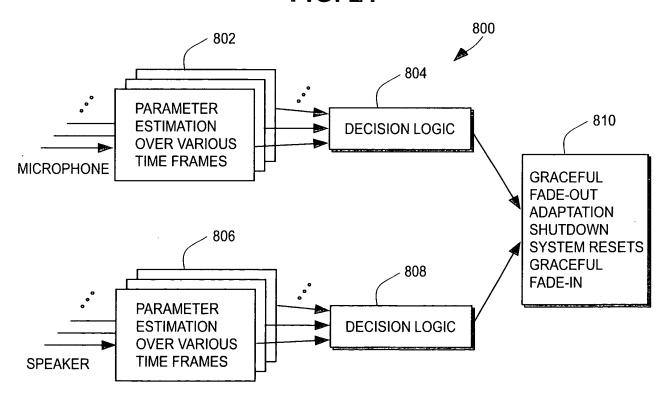


FIG. 21



CORRECTED DRAWINGS
ADAPTIVE FILTER FOR SPEECH ENHANCEMENT IN NOISY ENVIRONMENT

Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake – (419) 255-5900

Serial No.

Docket No:
09/692,725

Sheet No. 13 of 16

13/16

FIG. 22

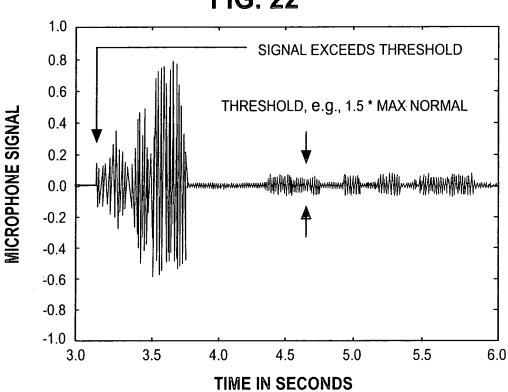
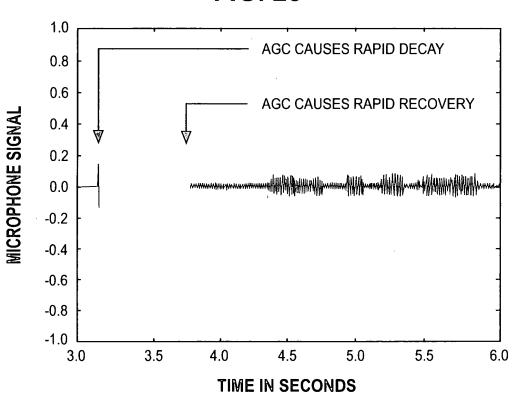


FIG. 23



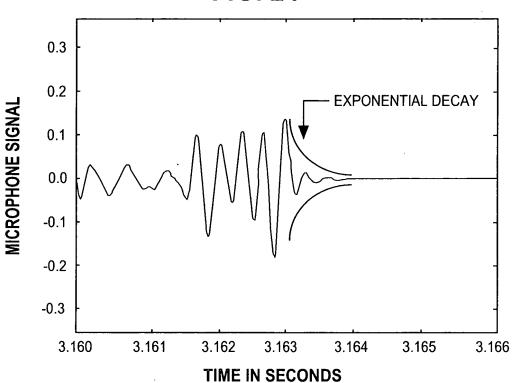
Name of Inventors: Venkatesh et al.

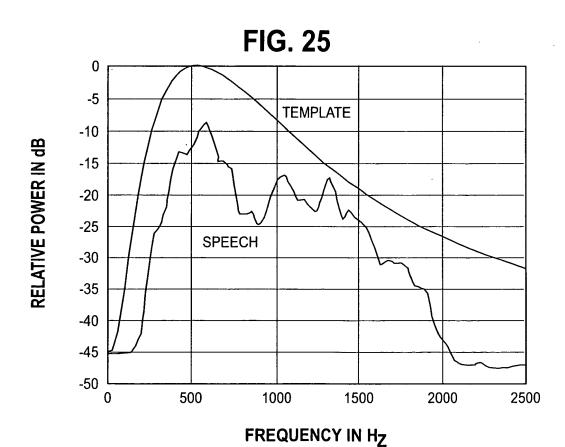
Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake - (419) 255-5900

Serial No. 09/692,725

Sheet No. 14 of 16 14/16

FIG. 24





CORRECTED DRAWINGS

ADAPTIVE FILTER FOR SPEECH ENHANCEMENT IN NOISY ENVIRONMENT

Name of Inventors: Venkatesh et al.

Name & Telephone Number of Person to Call if Necessary:
Scott A. Blake – (419) 255-5900

Serial No.

09/692,725

Sheet No. 15 of 16

1-82161

15/16

